

FIG.1

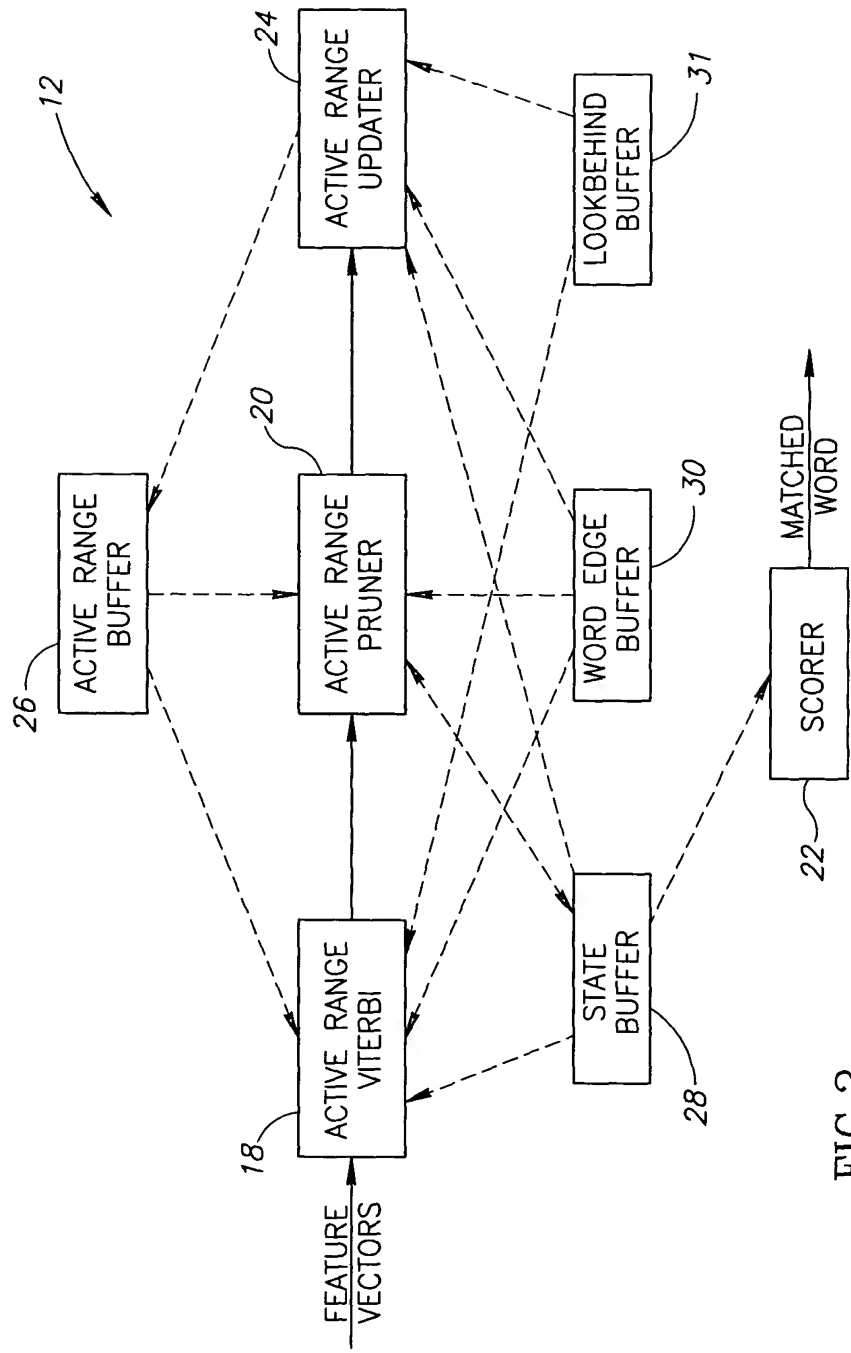


FIG.2

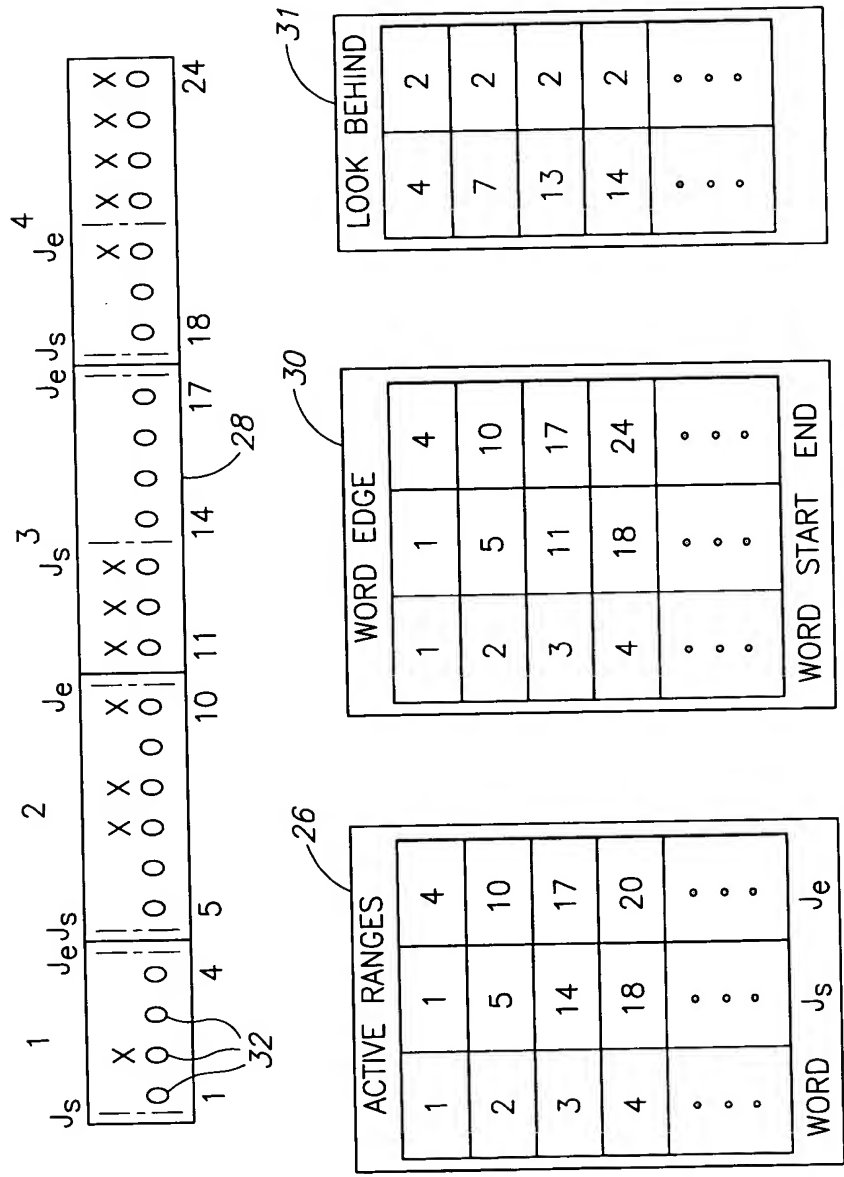


FIG.3

Active Range Viterbi

```
40: Loop from last word w,  
    42: Loop from end state  $j_e$  of wth word to start state  $j_s$   
        44: Do Viterbi operations  
    Endloop  
Endloop
```

Fig. 4

Active Range Pruner

```
46: Loop from word w,  
    48: Loop from start state  $j_s$  to end state  $j_e$  of wth word  
        50: Do pruning operations  
    Endloop  
Endloop
```

Fig. 5

Active Range Updater Version 1

For each word w in the state buffer:

```
{
Beginloop: Loop over states  $j$  of word  $w$  from start  $j_s$  of former word range
to end  $j_e$  of former word range
    52: If state  $j$  is active:
        54: store state  $j$  as start state  $j_s$ 
        56: go to finding end of range
    Endif
Endloop
no active states: set start and end states to noactivestate flag
    58: go to End
finding end of range:
    60: if the end state  $j_e$  is active, then
        62: if (Range end state  $j_e$  = Word end state)
            64: store state  $j_e$  as end state  $j_e$ 
        otherwise:
            66: store state  $j_e + 1$  as end state  $j_e$ 
    otherwise:
        68: Search over states  $j$  from right to left
        70: If state  $j$  is active:
            72: store state  $j + 1$  as end state  $j_e$ 
}
```

Fig. 6

Active Range Updater Version 2

For each word w in the state buffer:

```
{
Init: 78: mark start_range_was_found as false
      80: Mark max_state_available as 0;
Beginloop: Loop over states j of word w from start js, of former word range
to end je, of former word range
      82: If state j is active and start_range_was_found is false:
            84: store state j as start state js
            86: mark start_range_was_found as true
      Endif
      88: Loop over "goto" states jk of state j
            89: if state jk is active:
                  90: If goto state jk is > max_state_available
                  92:   max_state_available = jk
            Endif
      Endloop
Endloop
94: If start_range_was_found is false
      96: set start and end states to noactivestate flag
      98: go to End
Endif
100: set end state je = max_state_available
End
}
```

Fig. 7